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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/383,227 08/26/99 SCHLOEMER

J

EXAMINER

WM02/0830

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LINCOLNSHIRE IL 60069

GREEN, M

ART UNIT

PAPER NUMBER

2681

DATE MAILED:

08/30/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/383,227

Applicant(s)

SCHLOEMER, JERRY R.

Examiner

Miguel D. Green

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

Information Disclosure Statement

All references submitted by the applicant have been considered. See signed PTO/SB/08A attached.

Drawings

- / 1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: radio number 16, line 16, and drops A & B (p.7, lines 3-4). Correction is required.

Specification

- / 1. The abstract of the disclosure is objected to because of the out-of-place period "." after "in a first band" in line 4. Correction is required. See MPEP § 608.01(b).
- / 2. The disclosure is objected to because of the following informalities: dashed lines instead of dotted lines are shown referring to Fig.1. Appropriate correction of page 4, line 8 is required.

Claim Objections

- / 3. Claim 1 is objected to because of the following informalities: "21" mis-typed at the end of line 4. Appropriate correction is required.
4. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the drop" in its first line. There is insufficient antecedent basis for this limitation in the claim. For the purpose of examination, it is assumed that "the drop" refers to "a drop" or a cellular switch (exchange) comprised in the routing system of claim 2, thereby completing the routing of calls to the PSTN land lines, wherein the drop contains crossbar switching apparatus that otherwise would have been in relays (see Fig.2) had they not been replaced, as per the disclosure (p.7, lines 2-9).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Daniel et al (US Pat. No. 5860058) in view of Frost (US Pat. No. 4284848).

Regarding claims 1 and 2, Daniel et al teaches in a multi-node, multi-channel, multi-remote radio telephone communications system, a routing system of call connection and

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call routing comprising: routes that are selectable from more than one possible route to a desired destination (note Figs.1&2 and col.3, lines 1-44), wherein the mobiles (CU 30) transmit on channels in a first band (42) and the nodes (12, analogous to bases; see col.3, lines 11-12) transmit on channels in a second band (40); and routing tables (Fig.2) to permit different destinations for different calls (note col.3, lines 33-38), whereby the entire system performs in a limited number of bands of frequencies (wherein N implies such a limit). Daniel et al teaches the routing of different calls selectively based on telephone number indications in that when a call is initiated by entering a user's (CU 30) telephone number, a number translation is made to assign a carrier frequency based on that user's telephone number that is unique to said user and thereby enable routing to said user destination node (col.4, lines 37-45); this number translation is embodied by the routing table (Fig.2).

Daniel et al teaches multiple nodes (12), including at least one intermediate node (see col.3, lines 38-44), but does not teach a blind node that does not support direct base to mobile communication. Daniel et al further does not teach said multiple nodes transmitting in the band used for transmission by the mobiles, and said multiple nodes receiving in the band used for receiving by the mobiles. However, Frost teaches a switched network system characterized by the use of radio transceiver subscriber base stations/nodes, analogous to base stations, which route calls as needed and serve as repeater stations (col.1, lines 44-49). Appropriately, any base station may be automatically configured either as a terminal station or as a repeater for calls to/from other radio base stations (col.3, lines 37-44). In the latter case, when used as a repeater, the radio base station is not able to directly communicate with a network subscriber (i.e., mobile terminals) while relaying/routing a call originated from another node; note col.4, lines 29-40.

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Furthermore, it is well known that repeaters as such routinely relay signals without frequency translation, thereby propagating the signal to its destination node through repeaters in the network, wherein each blind node repeater subsequent to the originating non-blind node (where a calling mobile is in communication) would re-transmit at the same signal frequency in the band of the initial transmission from the calling mobile. The reverse case of signal reception relaying is likewise well known, i.e., to route a call to a destination node via blind node repeaters relaying in the same band used for reception by a receiving/called mobile. It would have been obvious to one of ordinary skill in the art at the time of the invention for Daniel et al to have at least one intermediate node to act as a blind node repeater that does not support direct base to mobile communication in the manner taught by Frost, so that calls may be efficiently routed through a network of multiple blind nodes while avoiding call contention/signal interference and interruption.

Regarding claim 3, the combination of Daniel et al and Frost teaches the system features as above, further wherein cross bar switching apparatus is in the base station node, accomplished by simple switching at the base sites; note Fig.21 wherein the VF switch and line interface read on such switching apparatus.

Regarding claim 8, the combination of Daniel et al and Frost teaches the system features as above and furthermore, wherein the routing tables are located at the nodes; see Daniel et al, col.3, lines 33-38 and col.5, lines 8-18.

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9. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al and Frost as applied to claim 2 above, and further in view of Chang et al (US Pat. No. 5890067).

Regarding claims 4 and 7, the combination of Daniel et al and Frost teaches the system features as above. This combination does not teach the use of directional antennas or signal strength determinations and dependencies. However, Chang et al teaches a radio communication system including adaptive (i.e., directional) antennas maximizing received signal strength and antenna patterns dependent upon actual received signal strength (note col.3, lines 50-63; col.4, lines 45-63; and Figs.7&8). It would have been obvious to one of ordinary skill in the art at the time of the invention for the system of Daniel et al and Frost to further include antennas with antenna patterns as taught by Chang et al to be used to beam node to node communication, so that communication may be optimized at least cost.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al and Frost as applied to claim 2 above, and further in view of Benkner et al (US Pat. No. 6023623).

Regarding claim 5, the combination of Daniel et al and Frost teaches the system features as above. This combination does not teach further including the usage of dynamic signal to interference tests as an aid to assigning channels. However, Benkner et al teaches in mobile radio networks a process for dynamically assigning channels based on interference tests (note col.2, lines 12-29). It would have been obvious to one of ordinary skill in the art at the time of the invention for the system of Daniel et al and Frost to further include the usage of the process as

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taught by Benkner et al, so that a channel is assigned having the utmost integrity (i.e., as free from interference as possible) and to provide good propagation conditions.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel et al in view of Chang et al.

Regarding claim 9, Daniel et al teaches in a multi-node, multi-channel, multi-remote radio telephone communications system (note Fig. 1) wherein the mobiles (30) transmit on channels in a first band (42) and the nodes (12, analogous to bases; see col.3, lines 11-12) transmit on channels in a second band (40), a routing system of call connection and call routing between nodes comprising routing tables to permit different destinations for different calls selectively based on telephone number indications (col.4, lines 37-45 and Fig.2).

Daniel et al does not teach providing antennas for communications between nodes, and selecting antenna patterns based on actual signal strength measurements. However, Chang et al teaches a radio communication system including adaptive (i.e., directional) antennas maximizing received signal strength and antenna patterns dependent upon actual received signal strength (note col.3, lines 50-63; col.4, lines 45-63; and Figs.7&8). It would have been obvious to one of ordinary skill in the art at the time of the invention for the system of Daniel et al to further include antennas selecting antenna patterns as taught by Chang et al to be used to beam node to node communication, so that communication may be optimized at least cost.

ant. max
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miguel D. Green whose telephone number is 703-308-6729. The examiner can normally be reached on Mon-Fri (9am - 6:15pm), second bi-week Mon OFF.

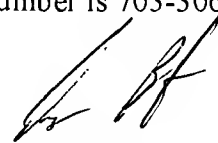
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on 703-305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service personnel whose telephone number is 703-306-0377.



MDG

August 27, 2001



DWAYNE BOST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

8-27-01